West Valley Demonstration Project

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WVDP SAFETY MANAGEMENT SYSTEM (SMS) DESCRIPTION

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Executive Summary

The Department of Energy (DOE), in response to Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 95-2, committed to implementing a plan to institutionalize a Safety Management System (SMS) across the DOE complex. The plan uses contract clauses that require contractors to follow SMS objectives, guiding principles and functions, and to describe the approach for implementing and tailoring an SMS to the contractors site/facility or activities.

The Defense Nuclear Facilities Safety Board (Board) issued Recommendation 2004-1 titled "Oversight of Complex, High-Hazard Nuclear Operations" on May 21, 2004. The DOE accepted the Board's recommendation on July 21, 2004. The Department developed its statutorily-required Implementation Plan (IP) in response to the Board's recommendation. The IP defines and describes specific actions that the Department has committed to complete to improve oversight of nuclear operations. These actions fit into three broad areas:

* Strengthening Federal Safety Assurance,
* Learning from External Operating Experience
* Revitalizing Integrated Safety Management (ISM) Implementation

As part of implementation DOE has issued new and revised orders to address improvements. DOE O 226.1A, *Implementation of Department of Energy Oversight Policy*, DOE O 210.2, *Corporate Operating Experience*, and DOE M 450.4-1, *Integrated Safety Management System Manual CRD*, have been implemented. This revision to WVDP-310 reflects order and manual implementation and internal process changes identified through the annual review process.

Section (e) of DOE Acquisition Regulation (DEAR) 48 CFR 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution,* requires that contractors submit to the contracting officer documentation of their SMS for review and approval. This document describes the SMS and fulfills the intent of both the clause and DOE Policy P 450.4, *Safety Management System Policy*.

Figure 1 describes the relationships for the basic elements of the SMS which include the following basic concepts:

Define Scope of Work - WVDP missions are translated into work by setting expectations, allocating resources, and prioritizing tasks. Work is defined from the budgetary level down through physical task performance.

Hazard Identification - Hazards associated with work are identified and analyzed to ensure that proper preventive and mitigative safety controls are identified and implemented. This includes facility level analyses such as Hazard Evaluation (HE) in support of the Documented Safety Analysis (DSA) development and Technical Safety Requirements (TSR), down to hazard screens and Job Safety Analyses (JSA) performed at the task level.

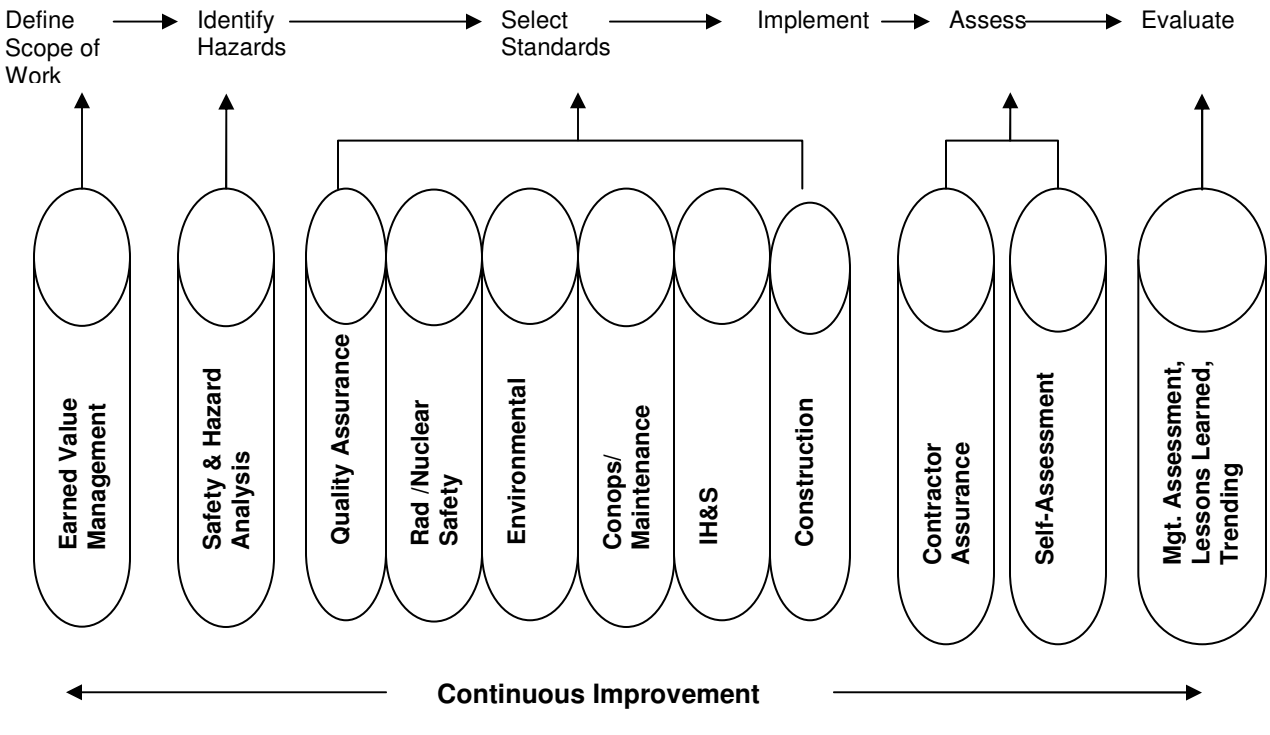
Standard Selection - Standards and requirements are selected that effectively implement appropriate safety controls and assure protection of the public, workers, and the environment. The controls are derived from State and Federal laws and regulations, DOE Directives, Standards, and Guides, national consensus standards, and WVES policies and programs.

Implementation - The three elements above are prerequisites to "DO WORK SAFELY." These prerequisites are then translated into procedures that govern facility-specific activities and are applied from facility startups and restarts down through the task level. After these prerequisites have been satisfied, readiness (operations authorization) is confirmed before actual work begins. This ranges from formal Operational Readiness Reviews (ORRs) and Readiness Assessments (RAs) for nuclear facility startups and restarts, down to line management approval of task level work documents.

Assessment - In addition to startup and restart reviews, several mechanisms are used to confirm readiness throughout the facility's life cycle. Self-assessment and independent assessment are two mechanisms used to collect data for analysis and feedback. The WVES Contractor Assurance System (CAS) is a key element of the assessment process.

Evaluation - Management assessment, performance indicators, lessons learned, trend analysis, and the event investigation processes allow line management to analyze feedback information and to measure performance against expectations and identify improvement opportunities.

Figure 1 – Safety Management System Elements



1.0 BACKGROUND

The framework for safety and health across the Department of Energy (DOE) complex is based upon a set of written Policies, Rules, Orders and Standards (hereinafter referred to as Standards). The implementation and integration of these standards at West Valley Demonstration Project (WVDP) establishes a safe workplace for the worker, the public, and the environment. The Safety Management System (SMS) Description provides an overview of the programs, policies, and procedures utilized to ensure that work is performed safely and is consistent with DEAR 48 CFR 970.5223-1, and DOE Policy 450.4.

2.0 PURPOSE

This document describes the SMS used by West Valley Environmental Services (WVES) to ensure that safety is integrated into work performed under Contract No. DE-AC30-07CC30000 (hereinafter known as "the Contract") between WVES and the DOE. For purposes of this document, the term "safety" includes all aspects of environmental, safety, and health including pollution prevention and waste minimization. This document fulfills the intent of DOE Policy 450.4 and Department of Energy Acquisition Regulation (DEAR) 48 CFR 970.5223-1.

The elements of the WVDP SMS have evolved to become part of the site's management philosophy since 1982. This document is a description of these elements and their functional relationship in the context of an integrated safety management system. Over time, elements of the WVDP SMS have been added or modified as a result of the following initiatives or recommendations:

- Operational Readiness Reviews and Readiness Assessments
- DOE Rules, Orders, Standards, and Guidelines
- Safety Document Review Comments and Recommendations
- Lessons Learned from Internal and External Operating Events
- Specific DOE Headquarters Initiatives
- Independent Internal Audits, Assessments, and Surveillances
- Worker and stakeholder feedback

As noted, the pre-ISMS elements of the site safety programs have been validated internally through Operational Readiness Reviews (ORRs), self-assessments, and internal audits, surveillances, and assessments conducted during the startup/restart of core facilities and processes at the WVDP. These elements have also been individually validated by the DOE through ORRs, Technical Safety Appraisals, surveillances, audits and annual ISMS verifications. A formal validation of the configured WVDP SMS was conducted by the previous site contractor, West Valley Nuclear Services Company (WVNSCO) as part of Integrated Safety Management System (ISMS) implementation in March 1998. An EM HQ (EM-3) review was completed in June 1998. DOE-OH performed on-site verification November 5 - 13th, 1998. The verification resulted in a positive recommendation and subsequent OH approval of this SMS Description. In addition to this approval, DOE-OH determined enhanced work planning to be effectively implemented as an integral part of the WVNSCO implementation of ISM. DOE conducted a team validation of the WVDP ISMS in August 2009 and concluded that the approved ISMS was implemented and effective.

Three other programs are central to implementation of ISM at the WVDP: the DOE Voluntary Protection Program (VPP), the Contractor Assurance System (CAS) and the Environmental Management System (EMS). WVNSCO received VPP Star certification in February, 2000, and was recognized as a charter member of the EPA's National Environmental Performance Track (NEPT) Program in December 2000 based on the project's environmental record. WVNSCO

received continuous ISM, VPP, and EPA performance track certifications. The USEPA announced cancellation of the Performance Track Program in early 2009. WVES is committed to continued participation in VPP and in June, 2009 resubmitted an updated application. An on-site review was conducted in November of 2009 and the WVDP was unconditionally re-validated as a STAR status site under WVES management.

The WVDP SMS is a dynamic system that will continue to support worker, public, and environmental safety as the work site changes to meet new or revised missions of the DOE. This is particularly true as the project has transitioned from operations to decontamination, deactivation, and demolition. The SMS will also evolve in response to new safety standards, including emerging national and international consensus standards, as well as lessons learned from internal and external operating experience.

On an annual basis, WVES will evaluate system implementation and effectiveness safety performance objectives, performance measures, and commitments made as part of SMS implementation. This will be accomplished consistent with DOE's program, guidance, and direction and will be described in the Contract as specific performance expectations and levels.

Annual safety performance objectives should focus on the sites most significant risks and vulnerabilities.

3.0 SCOPE

The term WVES is defined as West Valley Environmental Services Company LLC. The SMS described herein applies to work performed or subcontracted by WVES and applies to all activities conducted by WVES or its subcontractors at the WVDP. The SMS description integrates the Quality Assurance, Environmental Management, Contractor Assurance, and worker health and safety programs. Addendum 1 contains the DOE approved 10 CFR 851, Worker Safety and Health Plan.

4.0 INTEGRATED SAFETY MANAGEMENT SYSTEM OVERVIEW

The DOE Safety Management System Policy, DOE P 450.4, subdivides the concept of the SMS into six primary components: Objective, Principles, Core Functions, Implementation, Responsibilities, and Mechanisms.

4.1 Objective

DO WORK SAFELY

4.2 Guiding Principles

The guiding principles are fundamental policies that guide actions, from the development of safety policies and procedures to the performance of work.

4.2.1 **Line Management Responsibility for Safety** - Line management is directly responsible for the protection of the public, the workers, and the environment. As a complement to line management, the DOE's Office of Environment, Safety, and Health provides safety policy, enforcement, and independent oversight functions.

4.2.2 **Clear Roles and Responsibilities** - Clear and unambiguous lines of authority and responsibility for ensuring safety shall be established and maintained at all organizational levels within the Department and its' contractors.

4.2.3 **Competence Commensurate with Responsibilities** - Personnel shall possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities

4.2.4 **Balanced Priorities** - Resources shall be effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, the workers, and the environment shall be a priority whenever activities are planned and performed.

4.2.5 **Identification of Safety Standards and Requirements** - Before work is performed, the associated hazards shall be evaluated and an agreed-upon set of safety standards and requirements shall be established which, if properly implemented, provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences.

4.2.6 **Hazard Controls Tailored to Work Being Performed** - Administrative and engineering controls to prevent and mitigate hazards shall be tailored to the work being performed and the associated hazards.

4.2.7 **Operations Authorization** - The conditions and requirements to be satisfied for operations to be initiated and conducted shall be clearly established and agreed-upon.

4.2.8 **Supplemental Safety Culture Elements** - Based on experience and learning over the past ten years since the inception of Integrated Safety Management, the Department has identified the following four supplemental safety culture elements to be used, along with the existing ISM guiding principles, to help develop the appropriate context or environment for effective implementation of ISMS within the DOE and at its sites and facilities in the future:

- INDIVIDUAL ATTITUDE AND RESPONSIBILITY FOR SAFETY. Every individual accepts responsibility for safe mission performance. Individuals demonstrate a questioning attitude by challenging assumptions, investigating anomalies, and considering potential adverse consequences of planned actions. All employees are mindful of work conditions that may impact safety, and assist each other in preventing unsafe acts or behaviors.
- OPERATIONAL EXCELLENCE. Organizations achieve sustained, high levels of operational performance, encompassing all DOE and contractor activities to meet mission, safety, productivity, quality, environmental, and other objectives. High-reliability is achieved through a focus on operations, conservative decision-making, open communications, deference to expertise, and systematic approaches to eliminate or mitigate error-likely situations.
- OVERSIGHT FOR PERFORMANCE ASSURANCE. Competent, robust, periodic and independent oversight is an essential source of feedback that verifies expectations are being met and identifies opportunities for improvement. Performance assurance activities verify whether standards and requirements are being met. Performance assurance through conscious, directed, independent reviews at all levels brings fresh insights and observations to be considered for safety and performance improvement.

- ORGANIZATIONAL LEARNING FOR PERFORMANCE IMPROVEMENT. The organization demonstrates excellence in performance monitoring, problem analysis, solution planning, and solution implementation. The organization encourages openness and trust, and cultivates a continuous learning environment.
- DOE recognizes these principles contain redundant attributes to other ISM principles, Core Functions, and VPP Elements. As such, DOE has deferred the implementation and guidance as they review the appropriate flow down of these elements.

4.3 Core Functions

The following functions provide the necessary structure for any work activity that could potentially affect the public, workers, and the environment.

4.3.1 **Define Scope of Work** - Contractual performance requirements are translated into projects, expectations are set, tasks are identified and prioritized, and resources are allocated.

4.3.2 **Analyze Hazards** - Hazards associated with the work are identified, analyzed, and categorized.

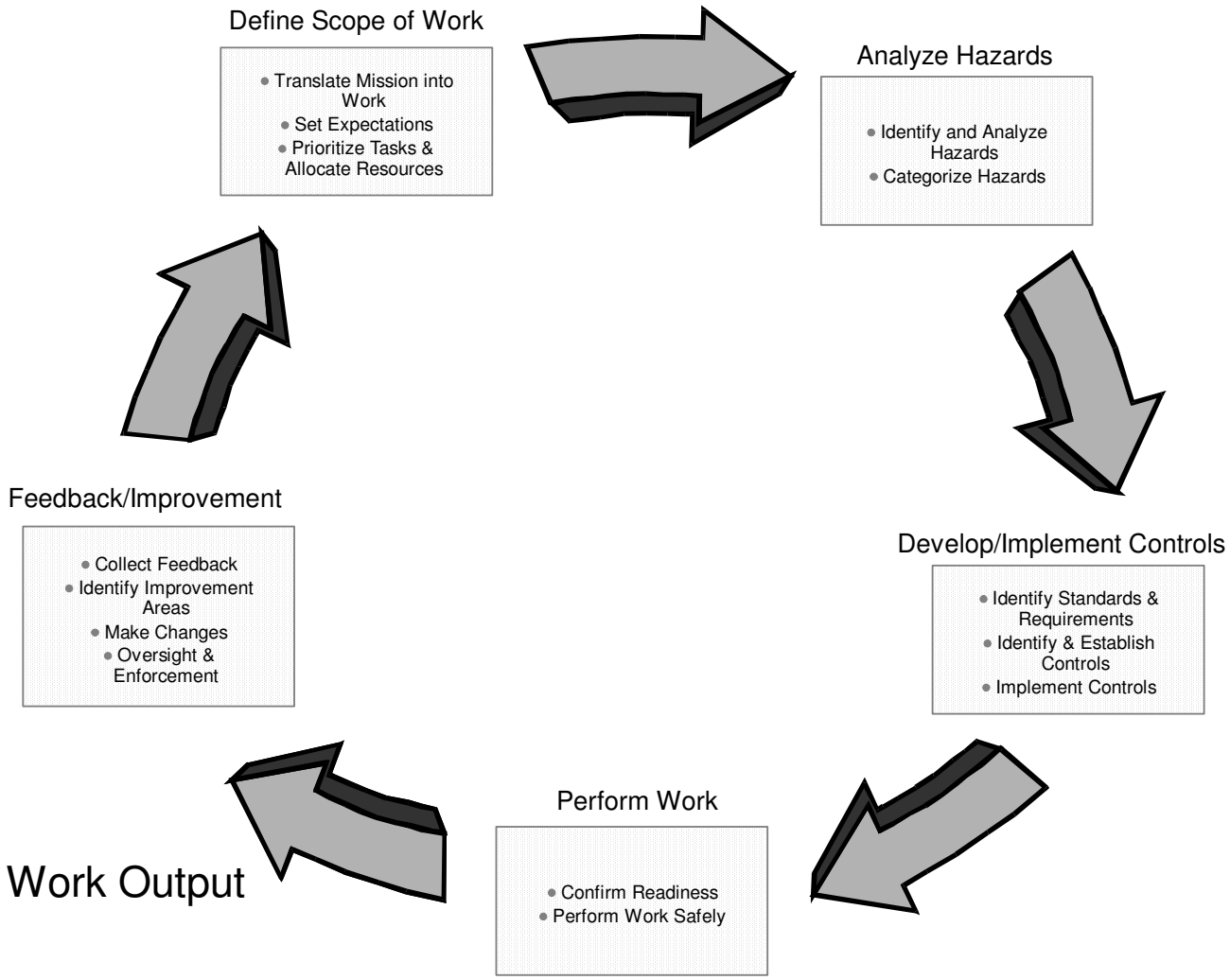
4.3.3 **Develop/Implement Controls** - Applicable standards and requirements are identified and agreed upon, controls to prevent/mitigate hazards are identified, the safety envelope is established, and controls are implemented.

4.3.3 **Perform Work** - Readiness is confirmed and work is performed safely.

4.3.4 **Feedback/Improvement** - Feedback information on the adequacy of controls is gathered, opportunities for improving the definition and planning of work are identified and implemented, line and independent oversight is conducted, and, if necessary, regulatory enforcement actions occur.

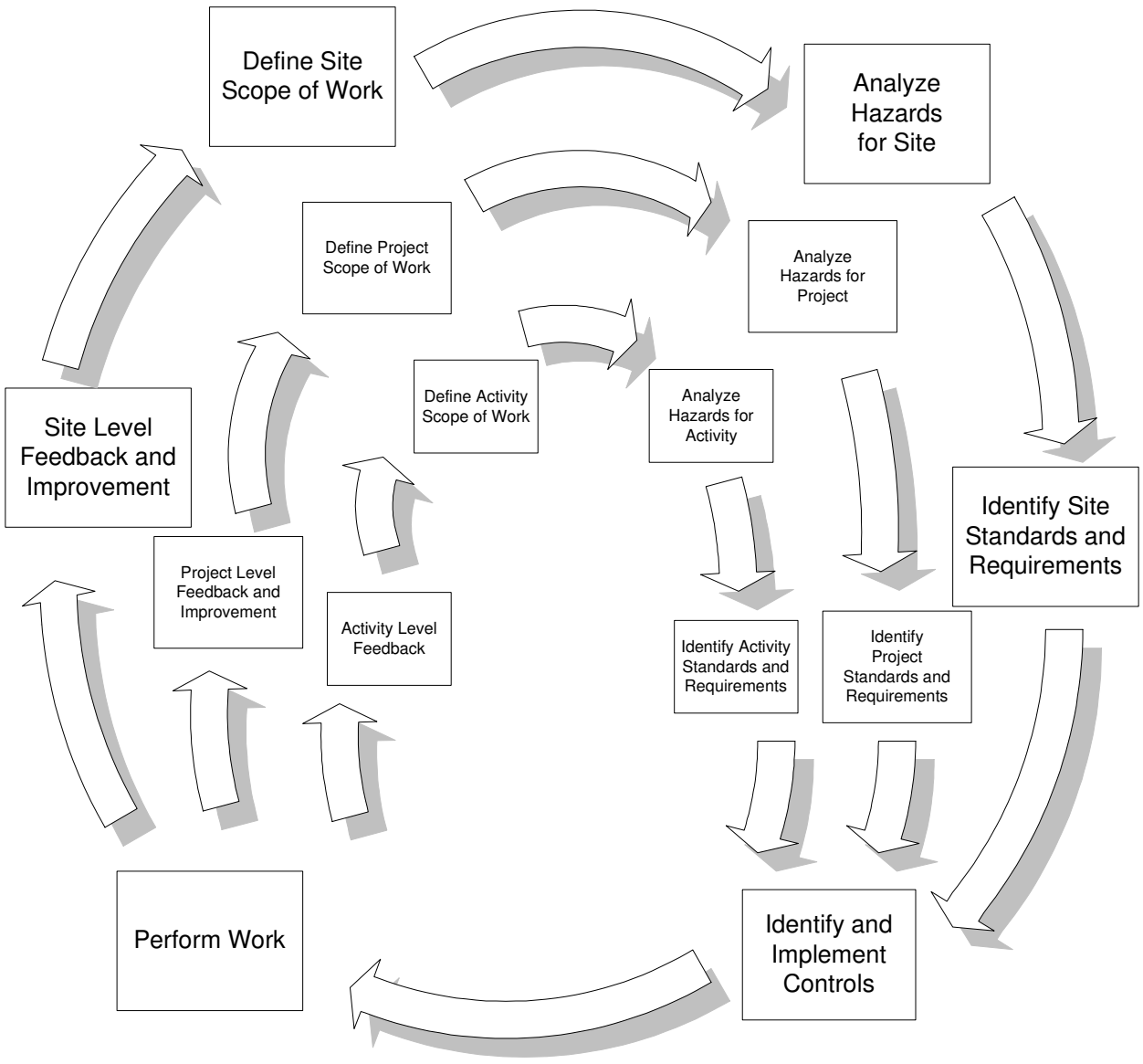
Figure 2 depicts the overall Safety Management Functions. Although arrows indicate a general direction, these functions are not independent, sequential functions. They are a linked, interdependent collection of activities that may occur simultaneously. Outcomes during the accomplishment of one function may affect other functions and potentially the entire system.

Figure 2 – Safety Management System Functions



Additionally, the core functions are integrated vertically throughout all levels (i.e., site, project, and activity) of the organization as shown by the vertical arrows in Figure 3.

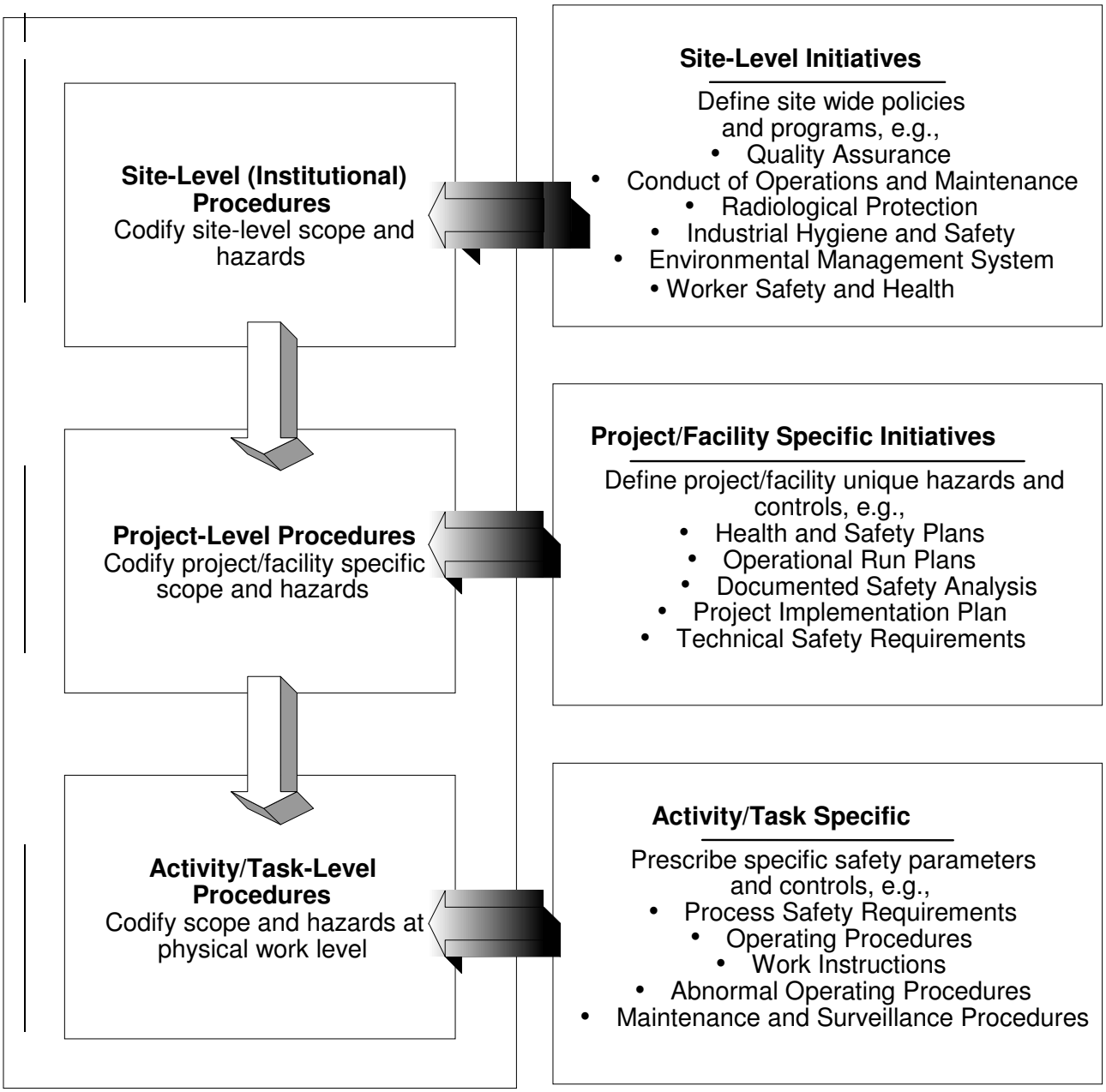
Figure 3 – Integration of the Safety Management System



4.4 Implementation

The strategy for implementing the SMS is through the use of integrated, existing site-wide programs. These programs were developed to meet shared ISMS objective, principles, and functions for tailoring requirements to accomplish specific work at the site and within individual facilities. Figure 4 depicts the integrated procedure framework for defining work scope at the site, project, and activity levels at the WVDP.

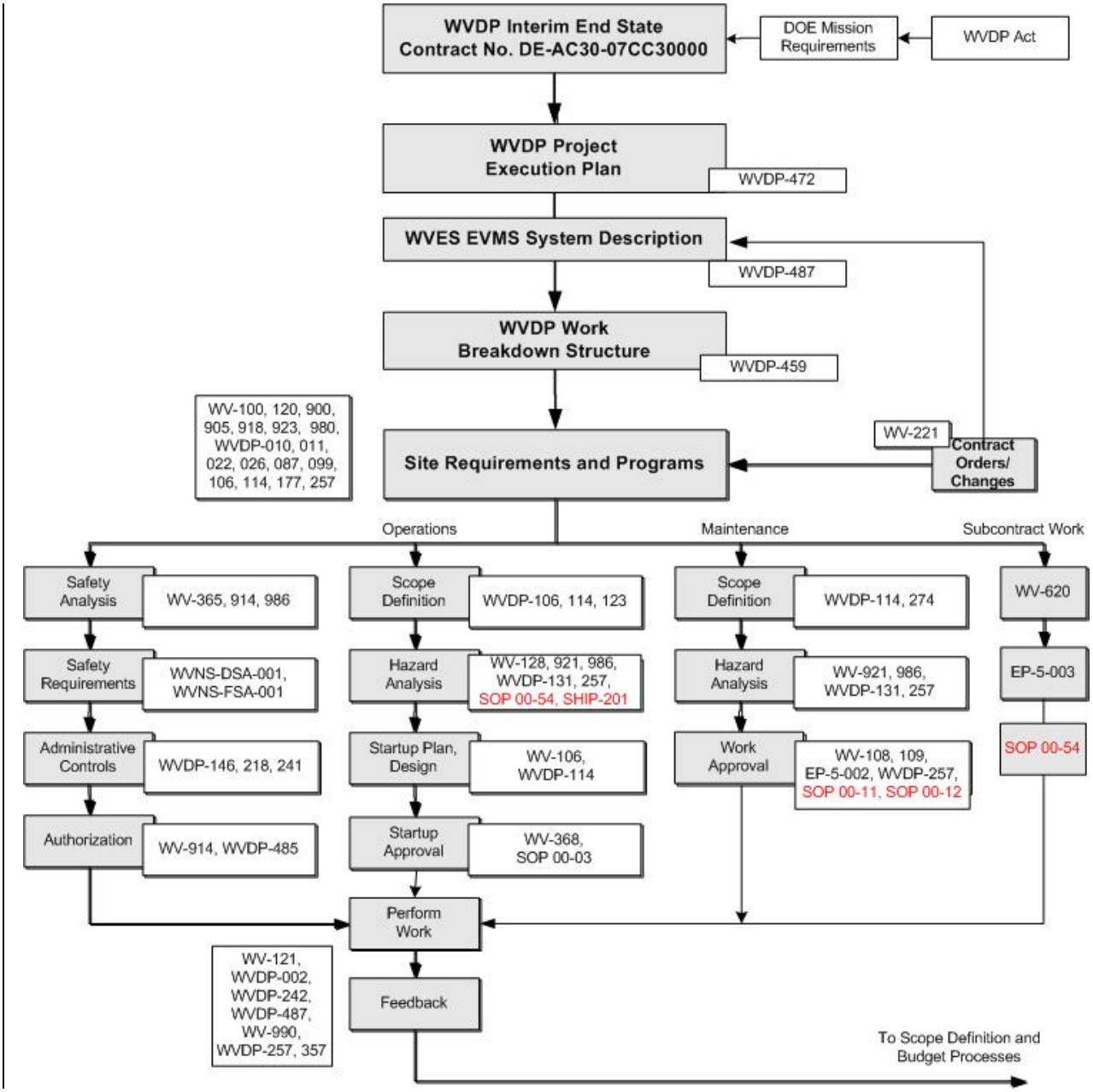
Figure 4 – Integrated Procedure Framework



This framework reflects site-level, project-level, and activity-level procedures consistent with organizational roles, and ensures a disciplined approach to safety while performing work.

Figure 5 provides a detailed, integrated illustration of the flow down of safety management system requirements, with example documents listed from the Contract level down through the physical performance of work at the activity/task level. Written guidance and requirements for hazard analysis at multiple levels (site down through activity) and a corresponding set of controls, i.e., physical and administrative are provided to ensure the protection of the worker, the public, and the environment.

Figure 5 – Flowchart of Safety Management System Requirements



At the site and project level, appropriate tailoring of these controls is determined through hazard analysis, with management decision-making and prioritization based on the severity/type of hazard and the complexity of the work.

At the activity level, implementation of worker protection is tailored to the specific hazards presented by the physical task. The safety programs, including industrial hygiene and safety, environmental protection, radiological safety, emergency management, fire protection, and nuclear safety are interwoven with other site-wide programs, including conduct of operations, conduct of maintenance, and construction. Work Review Group and worker involvement have been institutionalized by policies and procedures.

WVNSCO received the DOE-VPP Star certification, on February 15, 2000 and has subsequently received five Stars of Excellence and one Legacy of Stars for safety performance. The 2008 team review was complimentary of the site safety culture, work control process and recognized the knowledge and experience of the workforce. It was recommended that WVES reapply for STAR status as a new company. WVES re-applied in 2009 and was validated later that year. WVES is committed to continuing star class safety performance.

4.5 Responsibilities

The organizational structure reflects the ISMS principle of line management responsibility for safety. The directive is owned by a senior manager (the Manager of Environmental, Safety, Health and Quality (ESH&Q) who is responsible for the environmental, nuclear safety, quality assurance, radiation protection, emergency management and worker health and safety programs. Administration and continuous improvement of the ISMS program is effected by the ISMS/Con Ops Manager. Line management within each staff organization has the responsibility for safety within their organizations and facilities (including those who perform primarily administrative functions).

4.6 Mechanisms

Mechanisms are the means by which SMS Guiding Principles and Core Functions are described and applied. Policies and procedures provide the corporate safety policy and expectations. Figure 4, Integrated Procedure Framework described in section 4.0 of the SMS provides an upper level view of the key documents and how they interrelate. Figure 5, Integrated Safety Management Process, provides a more complete flow of the SMS from the Contract down through the physical performance of work. The remainder of this system description addresses the environmental systems (Section 5.0); the specific mechanisms and interrelationships used to address the ISMS Guiding Principles and Core Functions (Section 6.0); the manner in which WVES addresses DOE Program and Budget Execution Guidance (Section 7.0); performance expectations (Section 8.0); application of laws, regulations, and DOE Directives (Section 9.0); the process used for evaluating and resolving SMS related non-compliances (Section 10.0); the process for flow down of requirements to subcontractors (Section 11.0); use of the SMS and how changes are controlled (Section 12.0); and overall conclusions relative to implementation of the SMS (Section 13.0).

5.0 ENVIRONMENTAL SYSTEMS

Consistent with DOE Directive (DOE O 450.1A), the site has a mature environmental management program which is integrated as part of the ISMS. WV-980, WVDP Environmental Management System, provides the basic policy and direction for accomplishing work through pro-active management, environmental stewardship, and integration of appropriate technologies across all company functions. Threats to the environment are evaluated through environmental assessments (EAs) or environmental impact statements (EISs), which are required by the National Environmental Policy Act (NEPA), as well as through environmental review at the activity level.

As shown in Figures 1 and 5, the EMS is fully integrated with the overall WVDP SMS. The WVDP EMS is that part of the SMS that includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing, and maintaining the environmental policy. Controlled documents that

implement the environmental management expectations contained in DOE O 450.1A are listed in the management summary for that Directive.

WVDP-099, Environmental Compliance Standards, contains implementing procedures which provide the structure by which specific activities can be carried out efficiently and in a manner consistent with key organizational goals; it also allows organizations the flexibility to adapt the system to their specific needs and priorities. The EMS approach has its genesis in the same movement that created the quality management systems traditionally applied to manufacturing. The two predominant EMS systems are the Code of Environmental Management Principles for Federal Agencies (CEMP) and the ISO/DIS 14001, Environmental Management Systems - Specification for Guidance and Use.

CEMP was developed by the Environmental Protection Agency (EPA) in response to Executive Order 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, and was signed on August 3, 1993. EPA patterned the CEMP on the common critical elements of a comprehensive management system tailored to the environmental activities of an organization (i.e., an EMS). CEMP uses five broad principles and underlying performance objectives as the basis for Federal agencies to move toward responsible environmental management. CEMP principles help ensure environmental performance that is proactive, flexible, cost-effective, integrated, and sustainable. ISO/DIS 14001, developed by the International Organization for Standardization, provides a comparable EMS construct that is being implemented throughout the world. The elements of an EMS correspond to the guiding principles and core functions of an integrated SMS.

Through WV-980, the EMS encompasses the requirements of both the CEMP and ISO 14001. The EMS provides for consideration of the impacts of site activities on the environment; follows practices that eliminate or minimize negative impacts; includes monitoring and compliance with all applicable environmental laws, regulations and requirements; and requires the management of programs, projects, and activities in a manner that protects the environment and public health.

The EMS was validated and recognized at the WVDP by the EPA as a well established system with a proven compliance record and is included as a charter member in the EPA's National Environmental Performance Track program. Commitments are made every 3 years with the most recent commitments established for the time period 2007 - 2009. While the P-track program was discontinued in early 2009, WVES continues to meet these commitments. In 2009, a third party audit of the EMS was conducted as part of DOE O 450.1A implementation. The audit concluded that EMS was fully implemented and a declaration was transmitted to DOE HQ.

6.0 WVDP SAFETY MANAGEMENT SYSTEM MECHANISMS

This section of the SMS demonstrates how Environment, Safety and Health programs are incorporated into work and links the ISMS safety objective, principles, and functions with the implementing strategy and responsibilities discussed earlier. The format of each section consists of a brief discussion of the core functions and guiding principles, followed by a listing of key site-level documents that implement the mechanisms. The primary, site-wide documents which form the core of the SMS are described below. These documents cross-cut all the subsequent sections and are not repeated in each section:

- **WV-100, Integrated Safety Management and Control of Documents**

This policy establishes the overall philosophy with respect to ISMS. It requires that management develop and implement a formal, organized ISMS whereby employees plan, perform, assess, and improve the safe conduct of work. This policy is institutionalized through lower level procedures and encompasses all levels of work activities and documentation related to safety management

at the West Valley Demonstration Project (WVDP). This policy defines safety as inclusive of environmental, radiological, industrial/chemical, and nuclear safety and health (ES&H) and encompasses the public, workers, and the environment.

- **WV-106, *West Valley Environmental Services (WVES) Conduct of Operations Applicability Matrix***
  WV-106 establishes the Conduct of Operations philosophy for achieving excellence. The applicability matrix augments DOE Order 5480.19, Conduct of Operations Requirements for DOE Facilities, and is the standard followed to enhance safe operations and deliver high quality products and services. The principles and philosophy of WVDP-106 apply to all facets of work planning and implementation. The goal is to promote greater ownership and accountability by line management and each individual.

- **WV-120, *Quality Assurance***
  WV-120 requires line management to implement a quality assurance program commensurate with the complexity of items/service, environmental impact, risk, and consequence of failure. Controls are based on item classifications which range from items important to worker and public safety to commercial grade items. Classification and levels of control are applied as appropriate to assure each task is done correctly the first time to meet or exceed customer requirements in a cost effective manner.

- **WV-121, *Integrated Assessment Program***
  The policy requires line management to develop, implement, and maintain an integrated assessment program at the WVDP that effectively complies with applicable DOE Directives (including DOEO 226.1A), Regulations, Standards and ISMS requirements. The program builds upon existing programs and activities; integrates assessments based on risk and project performance; eliminates/reduces redundant assessments, and; ensures that opportunities for improvement are identified, reported, tracked and corrected. It complements and utilizes other reviews of quality affecting processes such as oversight, surveillance, inspection, document review, independent assessment, management assessment, and external reviews. The Integrated Assessment program (IAP) includes departments, facilities and projects under contractor cognizance for the specific purpose of evaluating performance, reducing risk and identifying improvement opportunities. The IAP applies to all disciplines including, but not limited to, safety and health, operations, maintenance, environmental protection, quality, decontamination & decommissioning (D&D), HLW activities, safeguards and security, cyber security, emergency management, business processes, and management.

- **WV-128, *Work Review Group***
  The Work Review Group (WRG) consists of a team of experienced individuals from various work and support groups which provide an integrated, multi-disciplinary approach to the review and issuance of work documents. The WRG assists the work planner in Hazard Analysis and selection of controls for application in ensuring the work activity is performed safely. WV-485, *Work Control*, describes the integrated work control process as implemented at the WVDP.

- **WVDP-022, *WVDP Emergency Plan***
  WVDP-022 provides a description of the WVDP emergency planning, preparedness, and response program. This program is designed to respond to and mitigate the potential consequences of an emergency at the WVDP. Specifically, the Emergency Plan provides an organized plan of action, identifies authorities and responsibilities of emergency response personnel and organizations, and identifies the personnel and equipment available during Emergencies at the WVDP. The Emergency Plan implements requirements of the DOE O 151.1C, Comprehensive Emergency Management System CRD and is WVES' RCRA

Contingency Plan which integrates ISMS into planning, preparedness, response and readiness assurance for operational emergencies at the WVDP.

- **WV-620, *Purchase Requisitions and Supplements***
  WV-620 provides the formal mechanism for establishing and transmitting safety program criteria to WVES vendors and subcontractors. An "Integrated Safety Management Requirements List" is required to be completed for all vendors/subcontractors performing work on site. In addition, WV-19012(a) & (b) provide General & Special Safety, Health and Security Rules for onsite services.

- **WV-900, *WVDP Worker Safety Policy***
  The Worker Safety Program requires that employees conduct business in a manner that ensures the safety and well being of WVDP workers, the public, and the environment. WV-900 requires that all unsafe conditions/practices which can be classified as "serious violations" by OSHA, be secured immediately and corrected on a priority basis; that adequate hazard analysis and hazard controls be applied to the planning, scheduling, and execution of all work to ensure the health and well-being of workers and protection of the environment and Project property; that engineering controls be used to reduce or eliminate as many job-related hazards and exposures as reasonably possible; that employees are thoroughly trained in safe work practices and understand that they have the right to stop any job they perceive is unsafe; that employees are aware of job-related hazards; that risks from fire are maintained at the lowest possible level; and that subcontracted activities are managed to protect all employees from injury and property against loss.

- **WVDP-177, *WVDP Fire Protection Manual***
  The fire protection program establishes requirements for a comprehensive fire and related hazards protection program for facilities sufficient to minimize the potential for the occurrence of a fire or related event, a fire that causes an unacceptable on-site or off-site release of hazardous or radiological material that will threaten the health and safety of employees, the public, or the environment; vital DOE programs suffering unacceptable interruptions as a result of fire and related hazards; property losses from a fire and related events exceeding defined limits established by DOE; and critical process controls and safety class systems being damaged as a result of a fire and related events.

- **WV-905, *Radiological Protection***
  This policy requires that radiological operations at the WVDP are conducted in a manner that ensures the health and safety of all workers, subcontractors, and the general public. Radiation exposures to workers and the public, and releases of radioactivity to the environment must be maintained below regulatory limits and deliberate efforts must be taken to further reduce exposures and releases in accordance with a process that seeks to make any such exposures or releases as low as reasonably achievable (ALARA).

- **WV-918, *Waste Minimization and Pollution Prevention Policy***
  WV-918 establishes the policy to conduct operations and activities in a way that minimizes the quantity and toxicity of wastes generated, eliminates or minimizes pollutant releases to the environment, and minimizes the use of toxic substances. This is done through improved design, product acquisition, and changes in technologies, work practices, and procedures. Waste reduction is accomplished by the following hierarchy of cost-effective, environmental protection practices: (1) source reduction, (2) environmentally safe recycling, (3) waste treatment, and (4) environmentally safe disposal. Waste treatment to reduce the quantity, toxicity, or mobility (or a combination of these) will be considered primarily when source reduction or recycling are not possible or practical. Integration of waste minimization programs is accomplished through incorporating the principles and goals into project scope and development mechanisms.

- **WV-923, *Nuclear Criticality Safety***
  This policy requires that fissionable materials shall be processed, stored, transferred, disposed, or handled in such a manner that the probability of a criticality incident is acceptably low. Workers, the public and private property will be protected from damaging effects and undue hazards that may arise from a criticality incident to the extent practical.

- **WV-935, *Management Expectations - Safety, Changing Conditions and Hazards, and Stopping Work***
  Senior management communicates expectations that safe work practices at the West Valley Demonstration Project be clearly understood by every worker on site. This policy reinforces management's expectations for safety, worker actions under changing conditions and hazards, and everyone's responsibility to stop work when conditions warrant.

- **WV-980, *WVDP Environmental Management System***
  WV-980 establishes the environmental management system which requires that all activities, including design, construction, testing, start-up, commissioning, operation, maintenance, and decontamination and decommissioning are conducted in a manner appropriate to the nature, scale, and environmental impacts of these activities. The EMS commits to full compliance with applicable Federal and New York State legislation and regulations for the protection of the environment, continual improvement, and the prevention and/or minimization of pollution.

- **WVDP-114, *Engineering Procedures Manual***
  This manual contains procedures which are applicable to site-wide engineering activities and represent the base requirements for conduct of engineering at the WVDP. WVDP-114 provides for the development of design basis documentation, design level hazard analysis, design review, change control, controlled release of engineering documents, preparation of engineering and scientific calculations, peer review, preparation of work and construction instructions, turnover, and equipment identification.

- **WVDP-274, *Maintenance Implementation Plan***
  WVDP-274 establishes the general policy and objectives for the site maintenance program. This policy requires that maintenance be performed in a manner which promotes operational safety, worker health, environmental protection and compliance, property preservation, and cost-effectiveness while meeting contractual performance requirements. WVDP-274 outlines the programs and policies that direct the site-specific activities of the maintenance program.

- **WVDP-257, *WVDP Manual for the Preparation, Review, Approval, Distribution, and Revision of Controlled Documents (DCIPs)***
  WVDP-257, contains document control implementing procedures (DCIPs) which provide site-wide guidance for the preparation, review, approval, issue, and distribution of controlled documents (procedures, plans, manuals) in accordance with WV-100. These requirements apply to both technical and administrative management programs, as well as to WVES subcontractors/suppliers when creating or revising documents for Project use. This document requires that proposed policy and procedure changes that impact the implementation of a Core Function or Guiding Principle, as identified in WVDP-310, be reviewed by the ESH&Q Manager.

6.1 Guiding Principles 1, Line Management Responsibility for Safety; 2, Clear Roles and Responsibilities; and 3, Competence Commensurate with Responsibilities

6.1.1 The first three Guiding Principles relate to responsibilities intrinsic in all five Core Functions. The principles help ensure that the management structure has

personnel who are focused on safety, understand their assignments, and are capable of carrying out their responsibilities.

6.1.2 In accordance with the first Guiding Principle, "Line Management Responsibility for Safety," line management is responsible for ensuring that work is performed safely, and in a manner that ensures adequate protection for employees, the public, and the environment. The site-level ES&H and operations programs described at the beginning of this section establish this expectation for WVES.

6.1.3 The second Guiding Principle, "Clear Roles and Responsibilities" builds upon the first principle. While all policies and procedures define personnel roles and responsibilities, the overall requirements for this principle are defined in:

- WVDP-146, *Technical Safety Requirements*
- WVDP-002, *Quality Management Manual*
- WV-106, *West Valley Environmental Services (WVES) Conduct of Operations Applicability Matrix*
- WVDP-274, *Maintenance Implementation Plan*

6.1.4 The third Guiding Principle, "Competence Commensurate with Responsibilities" requires that contractors ensure that personnel possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities. A combination of position/job descriptions, training requirements validation checklists (TRVCs), and individual specialized training programs are utilized to meet this commitment. Base requirements are established for competency requirements through:

- WV-538, *Employee Indoctrination and Training*
- WV-552, *Required Reading/Briefing for WVES Personnel*
- WVDP-002, *Quality Management Manual*
- WV-106, *West Valley Environmental Services (WVES) Conduct of Operations Applicability Matrix*
- WVDP-126, *Performance-Based Training Program Manual Preface*

6.2 Core Function 1, Define Scope of Work and Guiding Principle 4, Balanced Priorities

The first Core Function requires that contractors identify and prioritize work and allocate resources. A well defined work scope defines the level of hazard identification/analysis required, provides the foundation for budgeting and resource allocation, and sets the base expectations and accountability. The DEAR Clause specifically requires that pollution prevention and waste minimization be included in the ISMS. Definition of work scope begins by translating DOE mission statements into discrete work activities. These work functions must be prioritized and funded, and then defined in lower level work procedures. A project management system is implemented that utilizes project plans and controls to ensure all core functions and guiding principles are addressed to safely complete project work.

Guiding Principle 4, "Balanced Priorities" requires that methods be in place to ensure a proper balance among competing priorities, e.g., budget, schedule, safety, quality. Internal and external conflicts over schedule, resource allocation, etc. must be reconciled such that safety is not compromised and work is completed.

In addition to the site-level programs described at the beginning of this section, requirements for work scope definition and balancing or priorities are established primarily through the following documents:

- WV-108, *Preventative and Predictive Maintenance and Recurring Task System*
- WV-109, *Instrument Data and Recall Tracking System*
- WVDP-487, *Earned Value Management System (EVMS) System Description*
- WVDP-204, *WVDP Quality List, "Q List"*
- WV-227, *Planning for Waste Treatment, Storage and Disposal*
- WVDP-087, *Waste Minimization/Pollution Prevention Awareness Plan*
- WVDP-123, *Laboratory Quality Assurance Program (PRD 4.0, Procedure/Method Control)*
- WVDP-472, *Project Execution Plan for WVDP Interim End State Contract DE-AC30-07CC30000*

6.3 Core Function 2, Analyze Hazards

Core Function 2, "Analyze Hazards" requires an understanding of the potential hazards from defined scopes of work such that the protection of the worker, the public, and environment are ensured. Once hazards are identified, adequate controls can then be selected from an appropriate set of standards and requirements, and then applied. Hazard analysis must envelope both design and physical performance of work and consider all types of hazards and how they might be interrelated.

Hazard analysis must also range from sophisticated techniques for evaluating nuclear facilities down through simpler tools such as checklists and walkdowns.

Policies and procedures are the primary mechanisms for triggering hazard analysis. Hazard Control Specialists (HCS), job planners, supervisors, and workers are expected, during all phases of work, to identify hazards. Checklists are used at the design and task levels to assist job planners in identifying areas where mitigation and control of the hazard can be preplanned with HCS and workers.

Walkdowns, mockups, job safety analysis, and pre-job briefings give the job planners and workers additional opportunities to communicate and understand the nature and complexity of the work.

Site wide or complex engineering projects utilize sophisticated techniques for safety and hazard analysis. Site level programs and plans communicate the expectations for ensuring that the project safety envelope established is maintained.

In addition to the site-level programs described at the beginning of this section, WVES establishes requirements for the analysis of hazards at the institutional, facility, and activity levels primarily through the following documents:

- WV-365, *Preparation of WVDP Safety Documents*
- WV-370, *Underground Utility Review Policy*
- WV-906, *Radiation and Safety Committee*
- WV-914, *Unreviewed Safety Question Process (USQP)*
- WV-921, *Hazards Identification and Analysis*
- WV-986, *Environmental Review Program*
- WV-989, *Job Safety Analysis Program (JSA)*
- WVDP-011, *WVDP Industrial Hygiene and Safety Manual*

- WVDP-121, *Fire, Safety, & Health Procedures (FHS-IH-1, Industrial Hygiene and Safety Hazard Control Program - Identification, Evaluation, and Control of Hazards)*
- WVDP-131, *Radiological Control Procedures (RC-ADM-16, Radiation Protection Organization Review, Routing, and Approval Procedure*
- WVDP-193, *WVDP Emergency Planning Hazards Assessment*
- WVDP-210*, Environmental Affairs Departmental Procedures*
- WVDP-215*, Industrial Hygiene and Safety Exposure Assessment and Monitoring Plan*
- WVDP-273, *WVDP Hazards Survey*
- SOP 000-46, *Work Instruction Walkdowns and Pre-Job Briefings and Post-Job Feedback Checklists*

6.4 Core Function 3, "Develop/Implement Controls"; Guiding Principle 5, "Identification of Safety Standards and Requirements"; and Guiding Principle 6, "Hazard Controls Tailored to the Work Being Performed."

Core Function 3, "Develop/Implement Controls" requires that after analyzing and identifying hazards, an appropriate set of controls be developed and an applicable set of safety standards and requirements identified (Guiding Principle 5, "Identification of Safety Standards and Requirements"). These controls should be tailored to both the hazards and work activity/operation such that the work can be performed safely (Guiding Principle 6, "Hazard Controls Tailored to the Work Being Performed").

Hazards and their control mechanisms are communicated to the workforce through standard policies and procedures. The Documented Safety Analysis and Health and Safety Plans define and communicate site project hazards and the controls required to mitigate the hazards.

Individual tasks rely on job briefings, radiological and industrial work permits, environmental screening, and other hazard specific mechanisms to communicate the complexity and nature of the hazard and the barriers used to protect the worker. Employees are responsible for understanding the scope of the work, including the hazards and controls prior to initiating a task. Job planners are required to consult HCS in the areas of industrial, radiological, chemical, and environmental hazards to ensure the strategy for mitigation of one hazard does not increase risk or change the mitigation strategy for another.

In addition to the site-level programs described at the beginning of this section, WVES establishes requirements for the development, implementation, and tailoring of controls, primarily through the following documents:

- WV-221, *Administration of DOE Directives, and DOE Technical Standards*
- WV-227, *Planning for Waste Treatment, Storage and Disposal*
- WV-365, *Preparation of WVDP Safety Documents*
- WV-370, *Underground Utility Review Policy*
- WV-371, *Integration of Environment, Safety & Health into Disposition Planning*
- WV-906, *Radiation and Safety Committee*
- WV-485, *Work Control*
- SHIP-201, *Industrial Work Permits and SMART Cards*
- WV-984, *ALARA Program*
- WVDP-010, *WVDP Radiological Controls Manual*
- WVDP-011, *WVDP Industrial Hygiene & Safety Manual*
- WVDP-026, *WVES Occupational Health Manual*
- WVDP-087, *Waste Minimization/Pollution Prevention Awareness Plan*

- WVDP-123, *Laboratory Quality Assurance Program Manual*
- WVDP-131, *Radiological Control Procedures (RC-ADM-6, Radiation Work Permits)*
- WVDP-210, *Environmental Affairs Departmental Procedures*
- WVDP-218, *Preface for Process Safety Requirements*
- WVDP-146, *WVDP Technical Safety Requirements*
- WVDP-241, *Site Specific Health and Safety Plan (HASP)*

In addition to the programs defined above, specific task level controls are defined in lower level procedures. Examples of these controls include:

- SOP 000-04, *Lock, Tag, and Confirm Procedures*
- SOP 000-11, *Troubleshooting and Maintenance of Electrical Equipment*
- SOP 000-12, *Maintenance Service Requests*
- SOP 000-38, *Administration of Hoisting and Rigging Activities*
- SOP 000-46, *Work Instructions Walkdowns and Pre-Job Briefings and Post-Job Feedback Checklists*
- SOP 000-49, *Control of Temporary Modifications*
- SOP 000-54, *DDWO Craft and DDWO Skill of the Craft Work Request*

6.5 Core Function 4, "Perform Work", and Guiding Principle 7,"Operations Authorization"

Core Function 4, "Perform Work" requires that once the hazards are analyzed and controls are identified and applied, the work be performed in accordance with the work instructions and controls. Guiding Principle 7, "Operations Authorization" requires that DOE and the contractor establish and agree upon the conditions and requirements that must be satisfied for work/operations to be initiated and conducted.

Policies and procedures require all workers and supervisors to understand the scope and complexity of the work prior to performance. Mechanisms to ensure preparedness at the facility level include line management self-assessments and operational readiness reviews. At the task level job planners are required to consider the level of preparedness required for each job. This includes consideration for training, experience, use of mockups, walkdowns, and pre-job briefings. Facility managers authorize work to be performed.

In addition to the site-level programs described at the beginning of this section, requirements are established for operations authorization and the performance of work primarily through the following documents:

- SOP 000-03, *Facilities, Equipment and Systems Turnover*
- SOP 000-46, *Work Instruction Walkdowns and Pre-Job Briefings and Post-Job Feedback Checklists*
- WV-108, *Preventative and Predictive Maintenance and Recurring Task System*
- WV-109, *Instrument Data and Recall Tracking System*
- WV-128, *Work Review Group*
- WV-368, *Operational Readiness Determination for Startup and Restart of WVDP Facilities*
- EP-5-003, *Approval Requests*
- WV-106, *West Valley Environmental Services (WVES) Conduct of Operations Applicability Matrix*
- WVDP-114, *Engineering Procedures (EP-5-002, Administration of Work Instruction Packages)*
- WVDP-123, *Laboratory Quality Assurance Program (PRD 4.0, Procedure/Method Control)*

6.6 Core Function 5, "Feedback/Improvement"

Core Function 5, "Feedback/Improvement" requires that work processes be routinely measured and evaluated to identify information that is meaningful to line management. This information is to be used to confirm performance within the ISMS and identify improvement opportunities. The Performance Assurance Plan per DOE O 226.1A is integrated throughout the feedback mechanisms in the ISMS and primarily implemented through WV-121, *Integrated Assessment Program*.

Engineers and operators regularly work together to improve the design of work activities including procedures and work packages, as well as equipment and tooling. Operations input, both before and after work evolutions (pre/post job briefings, walkdowns, etc.), is a key element in the improvement of work activities.

Included in the feedback process are activities such as line management self-assessments, performance indicators, event investigations, critiques, occurrence reports, trend analysis, internal, management and independent assessment.

The charters of a number of standing committees have been established and formalized in order to foster continued improvement in ISMS implementation. The Safety Success Team develops and implements programs to encourage safe work behavior. Additionally, the WVES Project Manager, senior managers, and operations personnel comprise the Central Safety Committee, which meets monthly to address general or specific safety concerns affecting the WVDP.

In addition to the site-level programs described at the beginning of this section, the requirements are established for feedback/improvement primarily through the following documents:

- WV-121, *Integrated Assessment Program*
- WV-221*, Administration of DOE Directives and DOE Technical Standards*
- WV-990, *Employee Concerns Program*
- WVDP-111, *West Valley Environmental Services LLC Quality Assurance Program*
- WVDP-074, *West Valley Environmental Services Company Quality Assurance Program for High Level Waste From Production Through Acceptance*
- WVDP-131, *Radiological Control Procedures (RC-ADM-9, Technical Services Department, Self-Assessment Program; RC-ALAR-5, Radiological Performance Goals, Indicators, and Monthly Inventories)*
- WVDP-209, *Environmental Monitoring Program Procedures (EMP-103, Self-Assessments for Environmental Programs)*
- WVDP-210, *Environmental Affairs Departmental Procedures (EAD-101, Environmental Affairs Assessments)*
- WVDP-214, *URS Environmental Monitoring Procedures (EM-11, Documentation and Reporting of Environmental Data)*
- WVDP-242, *Event Investigation and Reporting Manual*
- WVDP-257, *WVDP Manual for the Preparation, Review, Approval, Distribution, and Revision of Controlled Documents (DCIPs)*
- WVDP-357, *WVDP Issues Reporting Program Manual*
- WVDP-487, *Earned Value Management System (EVMS) System Description*
- SHIP-101, *Environment, Safety and Health Reporting*
- SHIP-103, *Worker Safety and Health Program Administration*
- SHIP-204*, Accident Injury Investigation*

7.0 PROGRAM AND BUDGET EXECUTION GUIDANCE

Another aspect of integration is the prioritization of safety planning with business processes, such as budget and resource allocation. WVDP-472, *Project Execution Plan for WVDP Interim End State Contract DE-AC30-07CC30000* delineates the project goals and objectives:

- Prioritize risk reduction
- Group similar work for efficiency
- Increase waste throughput capacity
- Reduce support costs
- Implement disciplined management control

Prioritizing risk reduction means prioritizing work to achieve removal of hazards that present a risk to workers, the public, and the environment. Managing risk is costly, so early risk reduction is a priority. WVDP-472, *WVDP Risk Management Plan*, describes the project management approach and tools used for risk management. As work is planned and resources are allocated to establish a performance baseline plan in accordance with WVDP-487, *Earned Value Management System (EVMS) System Description* and other relevant procedures and policies, the priority of safety and hazard reduction is addressed. Resources required to perform hazard analysis, implement controls, authorize and safely perform the work are allocated during this planning process. Workers, supervisors, line managers and senior managers have input into the process. This baseline plan becomes the basis of the cost account planning reports that cost account managers use as a basis for work authorization.

Performance of scope is managed through the Plan of the Day/Week process, which controls resource allocation priorities on a day-to-day basis to assure proper staffing, planning, permits, and approvals are in the plan prior to initiation of field work. The WVES program and budget execution process is consistent with DEAR 48 CFR 970.5223-1.

8.0 PERFORMANCE EXPECTATIONS

8.1 Contractor Assurance System (CAS)

Consistent with DOE Order 0 226. 1 A, *Implementation of Department of Energy Oversight Policy,* WVES has established a Contractor Assurance System (CAS) which provides a comprehensive and integrated approach to contractor assurance consistent with 10 CFR 830, Subpart A, *Quality Assurance,* DOE Order 0 414.1C, *Quality Assurance,* and applicable WVES contract terms and conditions. The overall elements of the CAS are described in the following paragraphs and the CAS is implemented through the mechanisms described throughout the Safety Management System Description (SMSD).

The WVES CAS as described in this SMSD and implementing policies, programs, and procedures is designed to identify deficiencies and opportunities for improvement; report deficiencies to the responsible managers and authorities; including URS Washington Division (URS WD), DOE, NYSERDA, state and federal regulators, and other stakeholders; and implement effective corrective actions.

8.1.1 The WVES CAS encompasses but is not limited to environmental, safety, health, quality assurance, safeguards and security, cyber security, and emergency management. The CAS includes:

A. Assessments (including self-assessment, management assessment, and internal independent assessments)

B. Incident/event reporting, including accident investigations
C. Worker feedback mechanisms
D. Issues management, including causal analysis, identification of corrective actions and recurrence controls, corrective action tracking and monitoring, closure of corrective actions and verification of effectiveness, trend analysis, and identification of improvement opportunities
E. Lessons-learned
F. Performance indicators/measures

Results of implementation of the WVES CAS are readily available to DOE and discussed during WVES/DOE management meetings, counterpart meetings, and weekly via the Weekly Project Status (WPS) report. In addition, implementation is continually assessed through the Performance Objectives, Measures, and Commitments (POM&Cs) established annually by both WVES (Section 8.0 of this SMSD) and DOE WVDP. A cornerstone of the WVES CAS is the Integrated Assessment Program (defined in WV-i21, *Integrated Assessment Program)* which provides for integrated, risk based planning and scheduling of WVES assessments.

8.1.2 The effectiveness of the WVES CAS is periodically confirmed through trend analysis, performance indicators/measures, self-assessment, independent assessment, management assessment, URS WD reviews, and DOE oversight. The WVES CAS monitors and evaluates all work performed under the WVES contract, including the work of subcontractors. As noted above and described in more detail below, key elements of the WVES CAS include:

A. Assessments

Assessment includes self-assessments, independent internal assessments, and management assessments. WVES develops, implements, and performs evaluations of WVDP facilities, systems, and organizational elements, including subcontractors on a recurring basis. The scope and frequency of assessments is determined per WV-121, *Integrated Assessment Program* via an Integrated Assessment Council (IAC) and documented in an Integrated Assessment Schedule (IAS) in accordance with WV-121, as well as through individual department self-assessment schedules, e.g., Radiation Safety, Industrial Safety, ISMS/Conduct of Operations, etc. The IAS is developed each calendar year and is based on input and participation from Council Members representing all site organizations and projects to ensure that all mandatory assessments are performed and that appropriate oversight is conducted based on the upcoming hazards, risk, and complexity of upcoming work scope. Specifically, the IAS ensures that all DOE and/or regulatory required assessments, inspections, etc. are scheduled and performed; the effectiveness of safety management programs, including those described in Section 6.0, *WVDP Safety Management System Mechanisms* and WVDP-146, *Technical Safety Requirements* are evaluated at an appropriate depth and frequency, and; additional assessments are performed based on risk, hazards, and complexity of work planned for the year and based on the results of trend analysis and performance indicators/measures, including the Performance Objectives, Measures, and Commitments (POM&Cs) listed in Section 8.0 of this SMSD. In addition to self-assessment and independent assessment, management assessment is also conducted annually (QM 2-4, *Management Assessment of Quality Program. Effectiveness),* and the

Quality Assurance department conducts audits (QP 18-1, *Quality Assurance Audits),* and surveillances (OP 10-3, *QA Surveillance of WVES Activities)* to continually evaluate project performance, manage risk, and evaluate the effectiveness of the CAS.

B. Event Reporting

Through WVDP-242, *Incident Investigation and Reporting Manual,* WVES has established a formal and structured process for the identification, reporting, and analysis of operational events at multiple levels, including reportable occurrences per DOE Directive M 231.1-1, *Environment, Safety, Health, Reporting Manual*. Nuclear safety and worker safety and health issues related to the Price-Anderson Amendments Act (PAAA) and Worker Safety and Health, and non-reportable events or conditions which if not appropriated addressed could lead to more significant issues are trended and analyzed in accordance with WV-121, Sections 6.4 and *6.5* on a ongoing basis with performance formally reported to WVES management quarterly (unless a negative trend is identified warranting immediate action and which is documented on an Issue Report per WVDP-357, *WVDP Issues Reporting and Program Manual).*

C. Worker Feedback

In addition to the structured self-assessments, independent assessments, and management assessments describe above, WVES also provides for worker input and feedback into work planning and hazard control. The following processes provide for worker input and feedback:

• WVDP-357, *WVDP Issues Reporting Program Manual* where all employees are empowered to write Issue Reports (IRs) to document deficiencies or areas for improvement.
• WV-128, *Work Review Group,* where work originators, hazard control specialists, and workers (operators) discuss proposed work and associated hazards prior to authorization for the work to proceed.
• WV-990, *Employee Concerns Program* where all –WVES employees are empowered to report workplace issues or concerns, including those related to safety, anonymously or non-anonymously without fear of reprisal.
• WV-900, *Worker Safety Policy* where workers rights to understand the scope of work and associated hazards, provide feedback, and where necessary stop work is emphasized.
• SOP 00-46 *Work Instruction Walkdowns and Pre-Job Briefings* which provide for worker feedback through pre-issuance walkdowns and post-job feedback checklists to provide site-wide consistency and to ensure that work instructions contain adequate instructions and that hazards are identified to provide worker safety and to help minimize work instruction field changes.
• EP-5-002 *Work Instruction Packages* which provides for pre-work worker feedback/input, post-job reviews, and completion of a post-job feedback checklist.
• WV-485, *Work Control* which provides for worker involvement, input, and feedback during initial work scoping.

• Employee Driven Teams such as Central Safety and Safety Success, which provide an open forum for all employee/workers to voice safety concerns or provide feedback.

D. Issues Management

Through WVDP-242, *Event Investigation and Reporting Manual* (event investigation and reporting, root cause analysis, lessons learned, PAAA screening), WV-101, *External and Internal Open Items* (issue tracking), *WVDP-357, WVDP Issues Reporting Program Manual* (issues management), and WVDP-343, *Reporting Incidents of Security Concern,* WVES provides a comprehensive, structured issues management system that provides for the timely and effective resolution of deficiencies. All deficiencies, regardless of their source are captured in the Open Items Tracking System (referred to as "OITS") which provides for effective analysis, resolution, tracking, and reporting. Through the above processes, the risk, significance, and priority of issues is determined, the scope and extent of conditions established, and reportability determined. Root cause, apparent cause, and common cause analysis is performed per WVDP-242, Chapter 7, *Causal Analysis* using a graded approach and appropriate corrective actions and recurrence controls are identified, tracked in OITS, statused, and completion of actions is statused weekly at all levels of WVES, including the WVES Project Manager.

E. Lessons Learned

Through WVDP-242, Chapter 10, *Lessons Learned Program,* WVES has established formal processes to communicate lessons learned during work activities, process reviews, and event analysis to WVES, URS WD and the formal DOE Lessons Learned system. The purpose of the Lessons Learned Program is to promote desirable and preclude undesirable outcomes. In addition to formal lessons learned issued per WVDP-242, WVES also communicates lessons learned through bi-weekly all-hands meetings, formal briefings, and through the Take-5-for-Safety which communicates lessons learned not only related to project work but also those applicable on a personal level when employees are off the site.

F. Performance Measures

WVES utilizes performance measures to identify, monitor, and analyze the performance of facilities, programs, and organizations. These measures are identified in the annual ISMS Performance, Objectives, Measures, and Commitments (POM&Cs) listed in Section 8.0, Performance Expectations of this SMSD as well as those established in the Weekly Project Status Report relative to operations and project performance. In addition to the POM&Cs, WVES has developed and implemented a Trend Analysis program (WV-121 section 6.4 and 6.5) which includes all WVES issue documentation, including Issue Reports, Critiques, Occurrence Reports, surveillance, audits, etc. as well as URS WD and DOE issues and concerns. These issues are categorized relative to ISMS, conduct of operations, radiation safety, industrial safety, environmental management system, and quality assurance aspects on a routine basis, evaluated weekly, and reported quarterly (WV-121).

Negative trends indicated by trend analysis or POM&C's are documented on Issues Reports and are managed in OITS, the centralized issues management system.

8.2 Integrated Safety Management (ISM)

The objective of ISM is to provide a safe workplace for workers, DOE, the public, and the environment. The minimum performance expectations as defined in the contract for this objective are:

8.2.1 Establish and maintain an effective safety program compliant with the requirements of an approved ISMS and the contract.

8.2.2 Ensure the effective flow-down of the safety program to employees and subcontractors.

8.2.3 Establish and maintain an effective Emergency Management Program that includes all of the following:

A. On time completion of all safety drills and exercises as described in the site Emergency Readiness Assurance Plan;

B. On time submission of annual revisions of the site Emergency Plan and the Site Hazardous Assessment;

C. Completion of all required annual emergency response organization training, and;

D. Support provided, as necessary, to DOE in actual or perceived emergency situations.

8.2.4 Establish and maintain an effective Radiation Protection program that meets the requirement of 10CFR835 and addresses the WVDP goal of zero (0) reportable clothing contaminations, skin contaminations, and internal contamination and/or uptakes.

8.2.5 Conduct all radiological activities consistent with the "As Low As Reasonably Achievable" (ALARA) principal.

8.2.6 Provide the appropriate environmental monitoring service.

8.2.7 Ensure compliance with all applicable environmental statutes, regulations, and permits.

8.2.8 Obtain and maintain the appropriate permits and licenses to perform the work.

8.2.9 Establish and maintain a DOE Directives matrix (includes DOE Policies, Notices, Orders, and Manuals) that accurately identifies cognizant personnel responsible for contract applicability determinations.

8.2.10 Maintain an effective nuclear facility safety program.

The following performance expectations are direct implementors for ISM as they provide for the project completion, cost and schedule expectations. Effective safety programs

without effective project, cost, schedule, and quality programs do not necessarily support an effective ISMS. Therefore the following performance expectations are part of ISM.

8.3 Quality Assurance Management (QA)

This objective is to ensure the contractor provides an effective quality assurance program. The minimum performance objectives are:

8.3.1 Establish and maintain an effective quality assurance program in compliance with DOE O 414.1C and 10 CFR 830, Subpart A.

8.3.2 For high level waste items and activities, establish and maintain an effective high level waste quality assurance program in compliance with DOE/RW-0333P, Rev 0.

8.4 Goals:

Contract performance measures and expectations are used to set challenging goals for program implementation such as Conduct of Operation and Radiation Protection. WV-121 provides description of performance reporting program. The Integrated Assessment Schedule is available in the Resource Center on the WVES Intranet.

8.5 Objectives:

For the contract period September 1, 2010 through September 30, 2011, WVES has developed the following performance objectives:

FY 2011 WVES Performance Measures, Objectives, and Commitments (PMO&Cs) Based on FY 2010 Performance *(Includes American Recovery and Reinvestment Act Scope)*	
OBJECTIVE	**MEASURE/COMMITMENT[(1)]**
Reduction of Workplace Illness/Injuries	Less than or equal to three recordable injuries
	Less than or equal to one Day Away, Restricted, or Transferred (DART) case
	Less than or equal to ten First Aid Cases
ISMS Review and Declaration	Complete WVES annual SMS effectiveness review and issue updated ISMS Description by June 30, 2011 (or 30 calendar days after receipt of the annual DOE HQ guidance)
	Develop FY 2012 PMO&Cs by June 30, 2011 (or 30 calendar days after receipt of the annual DOE HQ guidance).
Ensure WVES Contractor Assurance System is Comprehensive and Integrated	Issue CY 2011 Integrated Assessment Schedule by December 31, 2010
	Complete 90% (or provide justification) of IAS assessments on time
Radiation Safety Performance	Zero ORPS Group 6-Contamination/Radiation Control reportable events (attributable to Radiation Protection Program Failure)
Quality Assurance Performance	Complete annual Quality Assurance Program Management Assessment by February 28, 2011
Work Control and Planning	Improve quality and timeliness of work documents processed through the Work Review Group.
Environmental Management System Performance	Zero environmental Notices of Violation (attributable to Environmental Management System Failure)
	Meet or exceed all finalized Environmental Management System objectives and targets as listed in WV-980, Appendix A that are supported by current WVES funding.
Integrated Safeguards and Security Performance	Complete 90% of scheduled Safeguards and Security self-assessments
	Less than or equal to three vehicle operating incidents resulting in physical damage and not attributable to mechanical failure
	Zero outside unauthorized access to internal information systems
Nuclear Safety Performance	Zero Technical Safety Requirement Violations (attributable to Nuclear Safety Program failure)
Waste Management/ Transportation Performance	Zero ORPS Group 8 - Transportation reportable events (attributable to Waste Packaging/Transportation Program failure)
Emergency Management	Complete all Emergency Readiness Assurance Plan (ERAP) commitments on or ahead of schedule or obtain DOE concurrence on reschedule/cancellation

[(1)] Attributable to ISMS or related program breakdown

9.0 LAW, REGULATIONS, AND DOE DIRECTIVES

DEAR 48 CFR 970.5204-2 requires the contractor to comply with the requirements of applicable Federal, State, and local laws and regulations (including DOE Regulations) in developing and implementing controls, unless relief has been granted in writing by the appropriate regulatory agency. Additionally, the contractor must comply with the requirements of applicable DOE directives appended to the contract.

The contract includes DEAR Clause 48 CFR 970.5204 which requires compliance with all applicable state and federal laws and regulations, and includes a specific set of DOE Orders which must be contractually satisfied (Attachment J1 to the Contract). WV-221, *Administration of DOE Directives and DOE Technical Standards*, describes the process in which WVES receives, evaluates, and implements these types of standards. The collective set of laws, regulations, and DOE Orders provide an external set of standards from which hazard controls may be selected and applied. This external set is complemented by an internal set of ES&H programs which include, and supplement these laws, regulations and DOE Orders with national consensus standards and best management practices. The primary ES&H, engineering, project, operations, maintenance, and construction programs described at the beginning of this section make up the internal set of standards.

10.0 PROCESS FOR EVALUATING AND RESOLVING NON-COMPLIANCES

A formal Quality Assurance program (WVDP-002) is utilized to implement DOE Rule 10 CFR 830 Subpart A and Order requirements for quality assurance. This program includes requirements for continually assessing performance and for managing deficiencies and non-compliances. In addition, WV-121, also requires both independent assessment and self-assessment and the formal resolution of issues resultant from these activities. A site-wide system for communicating and resolving issues is described in WVDP-357. The Issues Reporting Program links with the site-wide, centralized Open Items Tracking System (OITS) (as described in WV-101, *External and Internal Open Items*) to follow actions identified by both internal and external oversight programs. Non-compliances related to the document described in this SMS will be managed via this system. A stop work order process (WVDP-002: QM 1, *Organization*) has been established to halt work where continuation could result in violation of approved work requirements, product damage, or personal injury. Any employee may stop work when unsafe conditions are perceived to exist.

11.0 PROCESS FOR FLOW DOWN OF REQUIREMENTS

DEAR 48 CFR 970.5223-1 requires that contractors flowdown SMS requirements to subcontractors and suppliers as follows:

> *The contractor shall include a clause substantially the same as this clause in subcontracts involving complex or hazardous work on site at a DOE-owned or -leased facility. Such subcontracts shall provide for the right to stop work under the conditions described in paragraph (g) of this clause. Depending on the complexity and hazards associated with the work, the contractor may require that the subcontractor submit a Safety Management System for the contractor's review and approval.*

The majority of subcontracted work at the WVDP is performed under the WVDP SMS. However, to clearly address the above requirement, a Procurement Bulletin instructs its buyers to include the DEAR Clause in all procurements. In addition, WV-620, *Purchase Requisitions and Supplements*, provides additional direction to requisitioners for hazard analysis, hazard control, and safety training determination; defines "complex or hazardous"; and describes the types of work for which subcontractors must submit an ISMS-equivalent program for review and approval. Implementation of Subcontractor ISM programs SHALL be evaluated during the annual ISM

review and SHALL verify that the subcontractors ISM program adequately describes their role within WVDP's ISM.

12.0 USE OF THIS MANUAL AND THE CHANGE CONTROL PROCESS

This document is a requirement of the DEAR Clause as incorporated into the Contract. EM HQ (EM-3) has approved this document, and any changes to the document that affect the objective, principles, or functions must also be approved by EM HQ (EM-3) or as formally designated. WVES may make editorial changes to this document without DOE approval.

As DOE and external requirements change, it is recognized that the ISM safety requirements may have to be added, deleted, or modified. A review of this document will be performed annually against the then current SMS expectations and one of the following actions will be taken:

- Submit a revision of the SMS Description for EM HQ (EM-3) or designee approval
- Submit page revisions of editorial changes to EM HQ (EM-3) or designee for information
- Submit a letter to EM HQ (EM-3) or designee indicating no change to the SMS Description

13.0 CONCLUSIONS

Implementation of the WVDP SMS is essential to control work performed at the WVDP and to address hazards to workers, the public and the environment. To achieve the objective of performing work safely, the WVDP SMS must be applied to the planning and performance of all types of potentially hazardous work, including construction, maintenance, operation, and decommissioning, as well as to design, environmental analyses, safety analyses, and risk analyses. All types of hazards including industrial, chemical, occupational, environmental, nuclear, radiological, electrical, and transportation must be recognized and appropriate controls specified before work begins. The identification, analysis, and control of hazards, and the use of feedback mechanisms for continuous improvement in the definition, planning, and performance of work are critical elements of the SMS.

This document provides the base SMS program description and assurance plan. It is a compilation and integration of existing site policies, programs, and manuals to address the ISMS Guiding Principles and Core Functions. The effectiveness of this SMS will be gauged via site metrics, performance measures and milestones selected to represent industrial, environmental, radiological, and nuclear safety performance. Modifications to the SMS and/or SMS programs will be made as necessary to improve project performance on a continuing basis.

14.0 APPENDICES

Appendix A - Glossary and Acronyms

APPENDIX A
GLOSSARY AND ACRONYMS

Guiding Principles - Fundamental policies that guide contractor actions from developing safety policies to performing work.

Mechanisms - The means (i.e., procedures and policies) by which the safety management functions are performed.

Safety Management Functions - Provide the necessary structure for any work activity that could potentially affect the safety of the public, workers, and the environment.

Tailoring - Methodology for determining the intensity and formality of safety management mechanisms commensurate with the work and associated hazards.

ALARA	As Low as Reasonably Achievable
CAS	Contractor Assurance System
CCP	Contract Change Proposal
CEMP	Code of Environmental Management Principles
CPB	Contract Performance Baseline
DEAR	Department of Energy Acquisition Regulation
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
DSA	Documented Safety Analysis
EA	Environmental Assessment
EMS	Environmental Management System
EPA	Environmental Protection Agency
EVMS	Earned Value Management System
HR	Human Resources
IAS	Integrated Assessment Schedule
IAC	Integrated Assessment Council
ISMS	Integrated Safety Management System
JSA	Job Safety Analysis
NEPA	National Environmental Policy Act
ORR	Operational Readiness Review
PAAA	Price-Anderson Amendments Program
POM&C	Performance, Objectives, Measures, and Commitments
RA	Readiness Assessment
R&C	Regulatory and Compliance Programs
SAR	Safety Analysis Report
SMS	Safety Management System
SMSD	Safety Management System Description

URS WD	URS Washington Division
USQP	Unreviewed Safety Question Process
WVDP	West Valley Demonstration Project
WVES	West Valley Environmental Services
WVNSCO	West Valley Nuclear Services Company

WVDP RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Original Issue	All	05/27/98
FC1	Changed to clarify status of flowdown of the ISMS DEAR Clause to subcontractors	21, 22	06/04/98
1	Major Change Revision	All	08/31/98
2	Minor revision Revised to update coversheet	All	10/16/98
3	Minor revision to update organization title changes	All	11/10/98
4	Minor revision to update procedure titles and to update current status of ISMS verification	All	09/30/99
FC1	Minor revision to update a contract number between WVNS and DOE	1	02/24/00
5	Minor revision to update procedure titles and to update current status of ISMS verification	All	10/02/00
FC1	Modified to reflect WVNS implementation of DOE N 450.4 Modified to insert a requirement that WVNS annually review subcontractor implementation of their ISM Re-paginated to reflect network printer update.	14 26 All	05/30/01
6	Modify Purpose (section 2.0) to note the certification of the WVDP as an EPA National Performance Track site	6	11/06/01
	Descriptive text, and Figure 6, WVNS Organizational Structure, should be modified to reflect recent changes in the WVNS organization	12	
	Add discussion of improvements to facilitate safety training determination for subcontractors	26	
7	This change was made per to make this procedure consistent with organizational changes. Updated cover page. Deleted “clause”. Changed WVNS to WVNSCO. Changed WVNS to WVDP. Deleted “WVNS believes”. Updated department titles.	 1 3,5 All 3,5,6,12,26 3 4,12,24	04/26/02

WVDP RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
7 (cont)	Changed work to projects.	7	
	Changed work orders to work instructions.	10	
	Updated Figure 5 flowchart.	11	
	4.5 Added emergency management.	12	
	4.5 Changed three to five.	12	
	Updated Figure 6 Organizational structure.	13	
	Changed report to system description.	13	
	5.0 Added paragraph.	15	
	Added WV-620.	16	
	Deleted references to WVDP-160.	17,19,20,21,22,30	
	Changed Determination to Process and USQD to USQP.	20,29	
	Deleted references to WV-111.	18,22,30	
	Added WV-602.	21	
	Updated SOP numbers and titles.	21	
	Changed PBS-04 to budget.	24	
	Changed CFR number.	25	
	Changed date to Sept. 28, 2001.	25	
	Changed manage to follow.	25	
	Deleted paragraph.	26	
	Deleted total.	26	
	12.0 Added maintenance.	26	
	Appendix A Deleted EP&RA and ERA&QA and added R&C.	28	
	This change affects no departments.		
8	Changed “WV-602, “Approval Requests” to EP-5-003, “Approval Requests” due to WV-602 being replaced	11,21,22, 23, 30	11/22/02
	Changes made to make procedure consistent with organizational changes	13	
	Added WVDP-022 to describe role in ISMS	16	
	Change made to reflect SAR consolidation		
	This change affects no departments.		
9	General Revision	All	11/25/03
	Changes do not affect the objective, principles, or functions of this program description as approved by OH/WVDP.		
	This change affects no departments		

WVDP RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
10	General Revision 2.0 Changed 450A-1A to 1B. Changed "review and update" to "evaluate implementation and effectiveness." Deleted "budget execution" from guidance. Added annual safety performance paragraph. Fig 4. Added TSRs to Figure 4. Fig 5. updated table to include WV-923 and WVDP-257 5.0 Added WVDP-099 reference. 6.0 Added reference to WVDP-170 and WVDP-177 6.3 Deleted WVDP-227 Relocated safety committees to feedback section 6.6 6.4 added reference to WVDP-241 8.0 added Performance Expectations Changes do not affect the objective, principles, or functions of this program description as approved by OH/WVDP. This change affects no departments	All	10/27/04
11	Add reference to WV-935 DOE Policy 450.4, Guide G 450.4-1A changed to read Guide G 450.4-1B Added: WVNSCO has been recommended to retain its Star Status after re-certification reviews in 2002 and 2005. DOE Order 151.1A changed to read DOE Order 151.1B WV-923 reworded WVDP-106 changed to read WVDP-106, West Valley Nuclear Services Company (WVDP) Conduct of Operations Manual Word "that" added to: Site level programs and plans communicate the expectations for ensuring that the project safety envelope established is maintained. WV911, Industrial Work Permit Program replace with SHIP-201 Industrial Work Permits 6.6 - word toling changed to read: tooling safety and health – capitalized No departments are impacted by these changes	17 6 13 16 17 19 20 21 23 24	01/05/06
12	Words added: and worker safety to 4.5 Deleted from 4.5: IH&S is under Industrial, Safety and Health Services, a separate senior management position reporting to the WVNSCO President. Words added: WVNSCO has received to present continued ISM, VPP, and EPA performance track certifications. Words added: The SMS description integrates the Quality	14 8	9/19/06

WVDP RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
12 (cont)	Assurance, Environmental Management, Performance Assurance, and worker health and safety programs		
	Figure 5, Page 13, added WVDP-384	13	
	Section 4.5 Responsibilities updated	14	
	Added: WV-121 Integrated Assessment Section	17	
	WV-204, WVDP Quality List, “Q List	21	
	Added: WVDP-146, Technical Safety Requirements		
	Core Function 4, "Perform Work", and Guiding Principle 7, "Operations Authorization" no longer bulleted	22	
	Added: SOP 000-50, Performing Routine Work In Areas Where ALARA Trigger Levels Are Exceeded	24	
	SOP 000-51, Performing Routine Work In Areas Where RWP'S And/Or IWP'S Are Required		
	Added: WVDP-074, West Valley Nuclear Services Company Quality Assurance Program for High Level Waste From Production Through Acceptance	25	
	Added: SHIP-204, Accident Injury Investigation	26	
	Words added/modified in 7.0		
	Deleted from 7.0: , WV-192, Budget Request System	27	
	Updated Figure 8 chart		
	Added: Section 8.4	31	
	DOE/WVDP changed to read EM HQ (EM-3) throughout the document		
	No departments are impacted by these changes		
13	Executive Summary Changes deleted: are being, per an approved implementation plan submitted as part of the contract change process.	All	06/14/07
	Added DOE M 450.4-1 Integrated Safety Management manual, drafted changed to read issued, issued or changed to read and manual		
	1.0 added and DOE M 450.4-1, deleted word and		
	2.0 changed complete description to read description		
	OH changed to read DOE-OH		
	EM HQ (EM-3) changed to read DOE		
	Deleted: (chemical storage, lock-out/tagout, Emergency Management, transportation safety, etc...).		
	3.0 Added at end: Addendum 1 contains the DOE approved 10 CFR 851, Worker, Health & Safety Plan		
	Figure 2: facility changed to read: project		
	4.2.8 Added Supplemental Safety Culture Elements		
	Added paragraph at end of 4.2.8		
	Deleted reference to SAR-023		
	4.4 Words added at end: and has subsequently received five Stars of Excellence and one Legacy of Stars for safety performance.		

WVDP RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
13 (cont)	6.6 Added: SHIP-103 7.0 Deleted reference to Ohio Field Office 8.0 Title changed from: Performance Expectations/Goals to Performance Expectations 8.4 title was Metrics, changed to Objectives, content changed to match 12.0 words added: or as formally delegated; or designee 13.0 words added: and Assurance Plan No Departments are impacted by these changes		
14	This change is made to prepare this procedure for resubmittal to DOE due to contract transition and contractor change to WVES. This change affects WVES.	All	09/07/07
15	Annual update to reflect organization, responsibility, directive, contract, program and procedure changes. Updated DOE O 226.1 to 226.1A. DOE O 210.1 changed to DOE O 210.2. Updated SAR to DSA terminology. Updated ISM validation info. 4.3.1 Changed project mission to contractual performance requirements. Changed mission to contract. Figure 5 - Updated to reflect new contract, EVMS and CCP guidance documents. Updated WV-110 to WVDP-106 and replaced WVDP-158 and WVDP-170 with WVDP-274. Changed VPP star status to “class” and updated ISMS organizational responsibilities. Deleted dated reference to WD:2001:0293. Added P-track commitment timeframe. Updated procedure titles and added new policies WVDP-485 and WVDP-472. 7.0 Updated section, replaced WV-182 with WVDP-472. 8.1 Added Contractor Assurance System description as recommended by the DOE ISMS Review Team. 8.4 Added 2008 Integrated Assessment Schedule. 8.5 Updated contract term and objectives. Appendix A - Added new acronyms. This change affects WVES.	 2 2, 18 4 10 11 12 13 13-21 21 22 26 30	10/14/08

WVDP RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
16	This revision added a Safeguards & Security goal to the FY2009 objectives as requested by DOE-WVDP. This change impacts Security and ESH&Q.	29	11/19/08
17	This revision updated references, organization titles, nomenclature, charts, responsibilities and POM&Cs. Added results of EMS and ISMAR and updated VPP status. ESH&Q and Project Integration are impacted by this revision.	3-5, 14, 17-19, 22 25-27, 29, 31,32	08/31/09
18	This revision updates the FY2011 objectives, department and document titles, nomenclature, adds new SOP(00-54) and deletes canceled (WVDP-384 & WVDP-412) documents. Deleted Cyber Security POMC for FY11 and added a Work Control & Planning metric. These changes impacts ESH&Q, WPC and Security.	3, 5, 13, 19, 21, 25 28, 29	08/26/10